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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/762,608	01/22/2004	Robert L. Mount	695004EDR	5041

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EXAMINER

SQUIRES, BRETT S

ART UNIT	PAPER NUMBER
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2836

DATE MAILED: 11/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/762,608	MOUNT ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Brett S Squires	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### ***Drawings***

1. The drawings are objected to because figure 14 has inversed colors, figure 14 should have white boxes with black text not black boxes with white text. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Abstract***

2. The abstract of the disclosure is objected to because it contains the following implied phraseology: "Detailed information on various example embodiments of the

inventions are provided in the Detailed Description below, and the inventions are defined by the appended claims." Correction is required. See MPEP § 608.01(b).

Applicant is reminded of the proper language and format for an abstract of the disclosure. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

### ***Specification***

3. The disclosure is objected to because of the following informalities: it contains the following grammar and spelling errors on page 5 paragraph 58 "surveillance" this is understood to be "surveillance", on page 6 paragraph 62 "in the event of power failure from the batteries" this is understood to be "in the event of power failure from the external power supply", and on page 8 paragraph 70 "The UPQ unit includes power electronics in batteries" this is understood to be "The UPQ unit includes power

electronics and batteries”, on page 11 paragraph 78 the input to output isolation specification “Dielectric strength 5KV, 120db common mode attenuation” this specification is understood to be “Dielectric strength 5KV, 120db common mode attenuation”, and on page 12 paragraph 78 the inverter regulation specification “50/60Hz + or – 0.1Hz” this is understood to be “50/60Hz + or – 0.1Hz”.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1,3-4,7-11,13, and16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordon (US 5,808,376) and Gilbert (US 2003/0007369) and Kenny (US 2003/0202344) and Brand (US 5,764,504).

Gordon discloses a power management and distribution system for a medical imaging device having an input circuit including a passive filter for receiving three phase AC power (figure 2A ref# 46,50 and col. 6 lines 42-64), an AC to DC converter receiving AC power from the input circuit (figure 2A ref# 64 and col. 7 lines 48-58), a regulating

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DC to DC converter receiving DC power from the AC to DC converter (figure 2A ref# 82 and col. 8 lines 9-25), a bank of batteries where the system is configured to receive DC power from the bank of batteries to produce DC power (figure 2A ref# 40, col. 9 lines 39-67, and col. 10 lines 1-23), a battery charging circuit receiving internal DC power with the battery charging circuit connected to provide charging for the batteries (figure 2A ref# 86,40, col. 9 lines 39-67, and col. 10 lines 1-23), the AC to DC converter is configured to operate using 50 or 60 Hz input power (col. 6 lines 42-64 and col. 7 lines 48-58), the internal batteries for supplying power for at least 10 minutes at full capacity load (figure 2A ref# 40, col. 9 lines 39-67, and col. 10 lines 1-23), a main circuit breaker that prevents current from flowing from the batteries onto the DC bus when the main circuit breaker is thrown (figure 2A ref# 52 and col. 7 lines 27-47)

Gordon does not disclose:

- A. a cabinet
- B. a high frequency DC to AC inverter
- C. an output circuit including a passive filter receiving power produced by the high frequency DC to AC converter
- D. two banks of batteries, where the system is configured to receive DC power from either of the banks to produce AC power by the high frequency DC to AC inverter such that the connection of both battery banks is not necessary to operate the high frequency DC to AC inverter
- E. the AC to DC converter is configured to operate using either 400 or 480 volt AC three phase input power

F. the capacity of the unit is about 30 KVA

B,C,E,F. Gilbert discloses a power controller having a high frequency DC to AC inverter (figure 4 ref# 74, figure 5 ref# 96, and page 3 paragraphs 42-45), an output circuit including a passive filter receiving power produced by the high frequency DC to AC inverter (figure 5 ref# 104,106 and page 3 paragraph 45), an AC to DC converter configured to operate using either 400 or 480 volt AC three phase input (figure 4 ref# 72, figure 5 ref# 94, page 3 paragraph 42), and the capacity of the unit is about 30 KVA (page 3 paragraph 44).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included in Gordon a high frequency DC to AC inverter such as that taught by Gilbert in order to allow the power management and distribution system to be used with devices the require AC power.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included in Gordon an output circuit including a passive filter receiving power produced by the high frequency DC to AC inverter such as that taught by Gilbert in order to provide reliable high quality power to the load device attached to the power management and distribution system by filtering out the unwanted and damaging frequency harmonics.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Gordon to include an AC to DC converter configured to operate using either 400 or 480 volt AC three phase input such as that taught by Gilbert in order to allow the power management and distribution system to

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operate using the power supplied from generator to keep the attached load device operating during prolonged power outages.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Gordon to increase the capacity of the power management and distribution system to about 30 KVA such as that taught Gilbert in order to allow the power management and distribution system to provide high quality reliable power to more devices. (The examiner recognizes that 30 KVA denotes the total power being provided and that 30 KW denotes to real power being provided. However, when the power factor is greater than 0.90 as recommend in the applicant's specification on page 9 paragraph 73, the total power provided will be about the same as the real power provided, thus a unit having 30KW capacity will have about 30 KVA capacity.)

D. Kenny discloses two or more banks of rechargeable batteries where one bank is used for proving power and the other battery banks are alternate cells. Kenny further discloses that each battery bank is used in a sequential manner (page 4 paragraph 42).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included in the above stated combination of Gordon and Gilbert two or more banks of rechargeable batteries such as that taught by Kenny in order to increase the effective life of each battery bank by rotating which battery bank is being used to supply power.

A. Brand discloses a high voltage uninterruptible power supply being housed in a cabinet (figures 9,10, col. 7 lines 63-67, and col. 8 lines 1-8).



It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included in the above stated combination of Gordon, Gilbert, and Kenny a cabinet for housing the power management and distribution system such as that taught by Brand in order to protect the power management and distribution system from being damaged by environmental elements.

Regarding Claim 8:

Gilbert discloses a battery start mode where power is applied to the DC bus from the batteries to start an energy source without an AC power source connected (page 2 paragraphs 36-37).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified the above stated combination of Gordon, Gilbert, Kenny, and Brand to include a battery start mode such as that taught by Gilbert in order to start a backup generator to keep the loads connected to the power management and distribution system operating during prolonged power outages.

Regarding Claims 9 and 10:

Gilbert discloses that the power controller has a main CPU (figure 2 ref# 32) that controls the way the energy source, utility/load, and energy storage device sinks or sources power and regulates the DC bus (page 3 paragraphs 32-33).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified the above stated combination of Gordon,

Gilbert, Kenny, and Brand to include a main CPU such as that taught by Gilbert in order to supply, store, and use power in an efficient manner.

7. Claims 2 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordon (US 5,808,376) and Gilbert (US 2003/0007369) and Kenny (US 2003/0202344) and Brand (US 5,764,504) and Frequency Hearing Ranges in Dogs and Other Species "How Well Do Dogs and Other Animals Hear?".

The above stated combination of Gordon, Gilbert, Kenny, and Brand discloses a power management and distribution system having a high frequency DC to AC inverter utilizing pulse width modulation at 15 KHz to produce AC power output, but does not disclose utilizing pulse width modulation at about 50 KHz to produce AC power output.

The article "How Well Do Dogs and Other Animals Hear?" discloses the hearing range for a dog is 67Hz – 45Khz (chart on page 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified the above stated combination of Gordon, Gilbert, Kenny, and Brand to include utilizing pulse width modulation at about 50 KHz to produce AC power output such as the taught by "How Well Do Dogs and Other Animals Hear?" in order to eliminate the noise being produced by the high frequency DC to AC inverter from the audible hearing range of dogs. Changing the frequency of the pulse width modulation of the DC to AC inverter from 15 KHz to 50 KHz allows the power management and distribution system to be used in an environment where dogs are present without causing harm to the dogs.

8. Claims 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordon (US 5,808,376) and Gilbert (US 2003/0007369) and Kenny (US 2003/0202344) and Brand (US 5,764,504) and Bigotti (US 4,160,571).

The above stated combination of Gordon, Gilbert, Kenny, and Brand discloses a power management and distribution system having two banks of batteries, but does not disclose the banks of batteries are organized in a front and rear vertical rack, with each rack providing access to each individual battery without the removal of other batteries, where the front rack may be swung about a pivot point near the bottom of the rack to provide access to the rear rack.

Bigotti discloses a shoe cabinet having a front shelf (figure 1 ref# 18) and a rear shelf (figure 1 ref# 17) with each shelf providing access to a pair of shoes without removal of other pairs of shoes, where the front shelf can be pivoted outwardly about a pivot point near the bottom of the rack (figures 1,2, col. 1 lines 50-68, col. 2 lines 1-2, 37-68, and col. 3 lines 1-10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have included in the above stated combination of Gordon, Gilbert, Kenny, and Brand the pivoting storage racks such as that taught by Bigotti in order to provide storage for the battery banks in the cabinet of the power management and distribution system using the smallest possible space.

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9. Claims 6 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordon (US 5,808,376) and Gilbert (US 2003/0007369) and Kenny (US 2003/0202344) and Brand (US 5,764,504) and DeWinter (US 5,835,364).

The above stated combination of Gordon, Gilbert, Kenny, and Brand discloses a power management and distribution system having an AC to DC converter, but does not disclose that the AC to DC converter includes a 12-pulse rectifier.

DeWinter discloses using a 12 pulse rectifier to convert three phase AC to DC (figure 4 and col. 8 lines 25-31).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified the above stated combination of Gordon, Gilbert, Kenny, and Brand to include a 12 pulse rectifier for converting three phase AC to DC such as that taught by DeWinter in order to reduce the amount of harmonics produced by the AC to DC rectification.

10. Claims 5 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordon (US 5,808,376) and Gilbert (US 2003/0007369) and Kenny (US 2003/0202344) and Brand (US 5,764,504) and Bigotti (US 4,160,571) and Frequency Hearing Ranges in Dogs and Other Species "How Well Do Dogs and Other Animals Hear?" and DeWinter (US 5,835,364).

The above stated combination of Gordon, Gilbert, Kenny, Brand, and Bigotti discloses a power management and distribution system having two banks of batteries organized in a front and rear vertical rack, with each rack providing access to each

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individual battery without the removal of other batteries, where the front rack may be swung about a pivot point near the bottom of the rack to provide access to the rear rack, a high frequency DC to AC inverter utilizing pulse width modulation at 15 KHz to produce AC power output, and an AC to DC converter.

The above stated combination of Gordon, Gilbert, Kenny, Brand, and Bigotti does not disclose:

G. a high frequency DC to AC inverter utilizing pulse width modulation at about 50 KHz to produce AC power output

H. the AC to DC converter includes a 12-pulse rectifier

G. The article "How Well Do Dogs and Other Animals Hear?" discloses the hearing range for a dog is 67Hz – 45Khz (chart on page 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified the above stated combination of Gordon, Gilbert, Kenny, Brand, and Bigotti to include utilizing pulse width modulation at about 50 KHz to produce AC power output such as the taught by "How Well Do Dogs and Other Animals Hear?" in order to eliminate the noise being produced by the high frequency DC to AC inverter from the audible hearing range of dogs. Changing the frequency of the pulse width modulation of the DC to AC inverter from 15 KHz to 50 KHz allows the power management and distribution system to be used in an environment where dogs are present without causing harm to the dogs.

H. DeWinter discloses using a 12-pulse rectifier to convert three phase AC to DC (figure 4 and col. 8 lines 25-31).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified the above stated combination of Gordon, Gilbert, Kenny, Brand, Bigotti, and the article "How Well Do Dogs and Other Animals Hear?" to include a 12 pulse rectifier for converting three phase AC to DC such as that taught by DeWinter in order to reduce the amount of harmonics produced by the AC to DC rectification.

### ***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure. Additional prior art of interest includes but is not limited to the following US Patents and Publications, Foreign Patents and Publications and Non-patent Literature: Sieren (US 3,821,997), Bright (US 2,145,581), Nelms (US 2,375,866).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brett S Squires whose telephone number is (571)272-2268. The examiner can normally be reached on 8am-5:30pm Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)272-2058. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brett S Squires  
Examiner  
Art Unit 2836



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